I claim:

1. A chemically defined HBM culture medium for maintenance, differentiation, and long-term growth of mammalian hepatocytes, comprising:

(a) a synthetic stock basal medium designed for mammalian cell culture; and

(b) a hepatocyte cell growth promoting amount of components selected from among nicotinamide, amino acids, transferrin, hormones, dexamethasone, trace metals, and simple carbohydrate selected from the group consisting of D-glucose and D-galactose and any combination thereof.

2. The HBM culture medium of a Claim 1 further comprising a buffer.

3. The HBM culture medium of Claim 2 wherein said buffer is HEPES.

4. The HBM culture medium of Claim 2 further comprising antibiotics.

5. The HBM culture medium of Claim 4 wherein said antibiotics are selected from the group consisting of penicillin and streptomycin and any combination thereof.

6. The HBM culture medium of Claim 4 further comprising albumin.

7. The HBM culture medium of Claim 6 wherein said albumin is selected from the group consisting of bovine serum albumin, human albumin, rat albumin, porcine albumin, and equine albumin.

8. The HBM culture medium of Claim 1 wherein said synthetic stock basal medium is selected from the group consisting of DMEM, MEM, Williams' Media E, BME, DMEM/F-12, Media 199, F-12 (Ham) Nutrient Mixture, F-10 (Ham) Nutrient Mixture, and RPMI Media 1640.

9. The HBM culture medium of Claim 1 wherein said amino acids are selected from the group consisting of L-glutamine, L-ornithine, L-proline, and L-arginine and any combination thereof.

10. The HBM culture medium of Claim 1 wherein said trace metals comprise zinc, manganese, copper, and selenium.

11. The HBM culture medium of Claim 1 wherein said trace metals further comprise $ZnCl_2$, $ZnSO_4 \cdot 7H_2O$, $MnSO_4$, $CuSO_4 \cdot 5H_2O$, and $NaSeSO_4$.

12. The HBM culture medium of Claim 1 wherein said transferrin is selected from the group consisting of holo-transferrin 30% saturated with iron and apo-transferrin in combination with iron gluconate.

13. The HBM culture medium of Claim 1 wherein said hormones comprise insulin and dexamethasone.

14. The culture medium of Claim 1 wherein said synthetic basal medium is DMEM.

15. The culture medium of Claim 14 wherein said DMEM contains about 0.1-5.0 g/L D-glucose, preferably about 2.0 g/L.

16. The HBM culture medium of Claim 1 further comprising a hepatocyte cell growth enhancing amount of growth factors.

17. The HBM culture medium of Claim 16 wherein said growth factors are selected from the group consisting of HGF/SF, EGF, and TGFα.

18. The HBM culture medium of Claim 6 further comprising a hepatocyte cell growth enhancing amount of growth factors.

19. The HBM culture medium of Claim 18 wherein said growth factors are selected from the group consisting of HGF/SF, EGF, and TGFα.

20. A mammalian cell culture medium comprising the composition of HGM as defined in Tables I and II, wherein the stock basal media of Table I comprises a blended DMEM such that the final concentration of D-glucose is preferably about 2.0 g/L and the amount of D-galactose is preferably about 2.0 g/L.

21. The culture medium of Claim 20 further comprising the components listed in Table III.

22. The culture medium of Claim 20 further comprising a hepatocyte cell growth enhancing amount of growth factors.

23. The culture medium of Claim 22 wherein said growth factors are selected from the group consisting of HGF/SF, EGF, and TGFα.

24. The culture medium of Claim 21 further comprising a hepatocyte cell growth enhancing amount of growth factors.

25. The culture medium of Claim 24 wherein said growth factors are selected from the group consisting of HGF/SF, EGF, and TGFα.